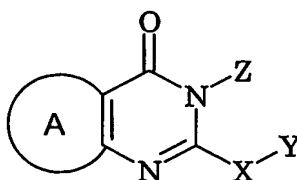


CLAIMS

1. A compound of formula (I):

5



(I)

wherein:

A is a benzene ring, a fused five-membered heteroaromatic ring containing  
 10 1, 2 or 3 heteroatoms independently chosen from O, N and S, providing that no more than one O or S atom is present, or a fused six-membered heteroaromatic ring containing 1, 2 or 3 N atoms;

A is optionally substituted by one, two or three groups independently  
 chosen from halogen, hydroxy,  $S(O)_rC_{1-4}alkyl$ ,  $S(O)_rNR^5R^6$ , formyl,  
 15  $C_{1-4}alkylcarbonyl$ ,  $C_{1-6}alkyl$ ,  $haloC_{1-6}alkyl$ ,  $hydroxyC_{1-6}alkyl$ ,  $C_{1-6}alkoxy$ ,  
 $haloC_{1-6}alkoxy$ ,  $hydroxyC_{1-6}alkoxy$ ,  $C_{3-7}cycloalkyl$ ,  $C_{3-7}cycloalkoxy$ ,  $C_{2-6}alkenyl$ ,  
 $C_{2-6}alkynyl$ , amino, nitro, cyano,  $C_{1-6}alkylamino$ ,  $di(C_{1-6}alkyl)amino$ ,  
 $aminoC_{1-6}alkyl$ ,  $aminoC_{1-6}alkoxy$ ,  $C_{1-6}alkylaminoC_{1-6}alkyl$ ,  
 $di(C_{1-6}alkyl)aminoC_{1-6}alkyl$ ; and a phenyl, naphthyl, a five-membered  
 20 heteroaromatic ring containing one, two, three or four heteroatoms independently  
 chosen from O, N or S, at most one heteroatom being O or S, and a six-membered  
 heteroaromatic ring containing one, two or three N atoms, the ring being  
 optionally substituted by halogen, hydroxy, cyano, nitro,  $NR^5R^6$  as defined below,  
 $C_{1-6}alkyl$ ,  $C_{2-6}alkenyl$ ,  $C_{2-6}alkynyl$ ,  $haloC_{1-6}alkyl$ ,  $C_{1-6}alkoxy$ ,  $haloC_{1-6}alkoxy$ ,  
 25  $C_{3-7}cycloalkyl$  or  $hydroxyC_{1-6}alkyl$ ;

X is O, S or  $NR^1$  where  $R^1$  is hydrogen or  $C_{1-6}alkyl$ ;

Y is  $(CR^2R^3)_n(CO)_p(NR^4)_qW$ ;

$R^2$  and  $R^3$  are independently hydrogen, hydroxy, halogen or  $C_{1-4}alkyl$ ;

$R^4$  is hydrogen or  $C_{1-6}alkyl$ ;

n is zero, one, two, three or four;

p is zero or one;

q is zero or one;

r is zero, one or two;

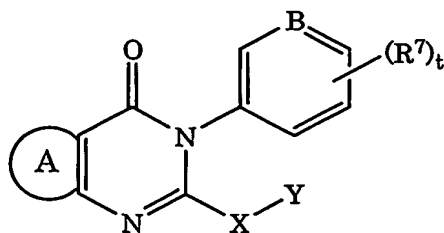
5        W is hydrogen, C<sub>1-6</sub>alkoxy, haloC<sub>1-6</sub>alkoxy, C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, hydroxyC<sub>1-6</sub>alkyl, aminoC<sub>1-6</sub>alkyl, carboxyC<sub>1-6</sub>alkyl, C<sub>3-7</sub>cycloalkyl, haloC<sub>3-7</sub>cycloalkyl; or a phenyl ring, a five-membered heteroaromatic ring containing one, two, three or four heteroatoms independently chosen from O, N and S, at most one heteroatom being O or S, a six-membered heteroaromatic ring  
10        containing one, two or three N atoms, or a nine- or ten-membered fused bicyclic heteroaromatic ring containing a phenyl ring or a six-membered heteroaromatic ring as just defined, fused to either a six-membered heteroaromatic ring as just defined or a five-membered heteroaromatic ring as just defined, a six-membered saturated ring containing one or two heteroatoms independently chosen from O  
15        and N, the ring being optionally substituted by halogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, nitro, cyano, C<sub>3-7</sub>cycloalkyl, hydroxy, C<sub>1-6</sub>alkoxy, haloC<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkoxy, hydroxyC<sub>1-6</sub>alkyl, hydroxyC<sub>1-6</sub>alkoxy, phenyl, an unsubstituted five-membered heteroaromatic ring as just described, a six-membered heteroaromatic ring as just described, a six-membered saturated ring as just  
20        described or NR<sup>5</sup>R<sup>6</sup>;

      each R<sup>5</sup> and R<sup>6</sup> is independently hydrogen or C<sub>1-6</sub>alkyl or R<sup>5</sup> and R<sup>6</sup>, together with the nitrogen atom to which they are attached, may form a saturated 4-7 membered ring;

      Z is a phenyl ring, a five-membered heteroaromatic ring containing one,  
25        two, three or four heteroatoms independently chosen from O, N or S, at most one heteroatom being O or S, or a six-membered heteroaromatic ring containing one, two or three N atoms, optionally substituted by halogen, hydroxy, cyano, nitro, NR<sup>5</sup>R<sup>6</sup> as defined above, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, haloC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkoxy, haloC<sub>1-6</sub>alkoxy, C<sub>3-7</sub>cycloalkyl or hydroxyC<sub>1-6</sub>alkyl;

30        when R<sup>1</sup> and R<sup>4</sup> are alkyl groups they may, together with the nitrogen atoms to which they are attached, form a piperazine ring;  
      or a pharmaceutically acceptable salt or tautomer thereof.

2.        A compound of claim 1 represented by formula (I)<sup>1</sup>:

(I)<sup>1</sup>

wherein:

B is N or CH;

5 t is 1, 2 or 3;

A is a fused five-membered heteroaromatic ring containing 1, 2 or 3 heteroatoms independently chosen from O, N and S, providing that no more than one O or S atom is present, or a fused six-membered heteroaromatic ring containing 1, 2 or 3 N atoms;

10 A is optionally substituted by halogen, C<sub>1-4</sub>alkyl, hydroxyc<sub>1-4</sub>alkyl; C<sub>3-7</sub>cycloalkyl, C<sub>3-7</sub>cycloalkylC<sub>1-4</sub>alkyl, phenyl or di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl;

X is O, S or NR<sup>1</sup> where R<sup>1</sup> is hydrogen or C<sub>1-4</sub>alkyl;

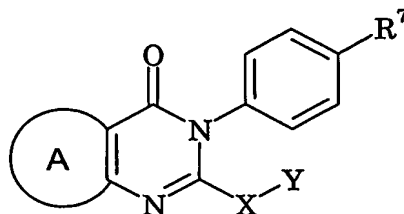
Y is (CR<sup>2</sup>R<sup>3</sup>)<sub>n</sub>(CO)<sub>p</sub>(NR<sup>4</sup>)<sub>q</sub>W, where R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, n, p and q are as defined in claim 1;

15 W is hydrogen, C<sub>1-6</sub>alkoxy, C<sub>1-6</sub>alkyl, haloC<sub>1-6</sub>alkyl, C<sub>3-7</sub>cycloalkyl; or a phenyl ring, a five-membered heteroaromatic ring containing one, two, three or four heteroatoms independently chosen from O, N or S, at most one heteroatom being O or S, a six-membered heteroaromatic ring containing one, two or three N atoms, or a nine- or ten-membered fused bicyclic heteroaromatic ring containing  
20 a phenyl ring or a six-membered heteroaromatic ring as just defined, fused to either a six-membered heteroaromatic ring as just defined or a five-membered heteroaromatic ring as just defined, the ring being optionally substituted by halogen, C<sub>1-4</sub>alkyl, hydroxy, C<sub>1-4</sub>alkoxy, haloC<sub>1-4</sub>alkyl, phenyl, haloC<sub>1-4</sub>alkoxy or NR<sup>5</sup>R<sup>6</sup> where R<sup>5</sup> and R<sup>6</sup> are independently C<sub>1-4</sub>alkyl or, R<sup>5</sup> and R<sup>6</sup>, together with  
25 the nitrogen atom to which they are attached, form a 5-6 membered saturated ring;

R<sup>7</sup> is hydrogen, cyano, halogen, C<sub>1-4</sub>alkyl, haloC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkoxy, haloC<sub>1-4</sub>alkoxy, amino, C<sub>1-4</sub>alkylamino or di(C<sub>1-4</sub>alkyl)amino;

when  $R^1$  and  $R^4$  are alkyl groups they may, together with the nitrogen atoms to which they are attached, form a piperazine ring; or a pharmaceutically acceptable salt or tautomer thereof.

- 5 3. A compound of claim 1 or 2 represented by formula (IA):



(IA)

wherein A is a fused five-membered heteroaromatic ring containing 1, 2  
10 or 3 heteroatoms independently chosen from O, N and S, providing that no more than one O or S atom is present, or a fused six-membered heteroaromatic ring containing 1, 2 or 3 N atoms;

A is optionally substituted by halogen,  $C_{1-4}$ alkyl,  $C_{3-7}$ cycloalkyl or phenyl;

X is O, S or  $NR^1$  where  $R^1$  is hydrogen or  $C_{1-4}$ alkyl;

15 Y is  $(CR^2R^3)_n(CO)_p(NR^4)_qW$ , where  $R^2$ ,  $R^3$ ,  $R^4$ , n, p and q are as defined for formula I;

W is hydrogen,  $C_{1-6}$  alkyl, halo $C_{1-6}$ alkyl,  $C_{3-7}$ cycloalkyl; or a phenyl ring, a five-membered heteroaromatic ring containing one, two, three or four  
20 heteroatoms independently chosen from O, N or S, at most one heteroatom being O or S, a six-membered heteroaromatic ring containing one, two or three N atoms, or a nine- or ten-membered fused bicyclic heteroaromatic ring containing a phenyl ring or a six-membered heteroaromatic ring as just defined, fused to either a six-membered heteroaromatic ring as just defined or a five-membered heteroaromatic ring as just defined, the ring being optionally substituted by  
25 halogen,  $C_{1-4}$ alkyl, hydroxy,  $C_{1-4}$ alkoxy, halo $C_{1-4}$ alkyl, phenyl, halo $C_{1-4}$ alkoxy or  $NR^5R^6$  where  $R^5$  and  $R^6$  are independently  $C_{1-4}$ alkyl or,  $R^5$  and  $R^6$ , together with the nitrogen atom to which they are attached, form a 5-6 membered saturated ring;

R<sup>7</sup> is hydrogen, cyano, halogen, C<sub>1-4</sub>alkyl, haloC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkoxy or haloC<sub>1-4</sub>alkoxy;

when R<sup>1</sup> and R<sup>4</sup> are alkyl groups they may, together with the nitrogen atoms to which they are attached, form a piperazine ring;

5 or a pharmaceutically acceptable salt or tautomer thereof.

4. A compound selected from:

- 3-(4-chlorophenyl)-2-[3-fluorobenzylthio]pyrido[3,4-d]pyrimidin-4(3H)-one;
- 10 3-(4-chlorophenyl)-2-{2-(4-chlorophenyl)-2-oxoethylthio}pyrido[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-[3-fluorobenzylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-{2-(4-chlorophenyl)ethylthio}pyrido[3,2-d]pyrimidin-4(3H)-one;
- 15 2-{5-chloro-1-benzothien-3-ylmethylthio}-3-(4-chlorophenyl)pyrido[3,2-d]pyrimidin-4(3H)-one;
- 2-[1-benzothien-3-ylmethylthio]-3-(4-chlorophenyl)pyrido[3,2-d]pyrimidin-4(3H)-one;
- 2-[1,3-benzothiazol-2-ylmethylthio]-3-(4-chlorophenyl)pyrido[3,2-d]pyrimidin-4(3H)-one;
- 20 3-(4-chlorophenyl)-2-[2-oxo-2-phenylethylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-{2-(3-chlorophenyl)-2-oxoethylthio}pyrido[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-(2-oxo-2-[4-trifluoromethoxyphenyl]ethylthio)pyrido[3,2-d]pyrimidin-4(3H)-one;
- 25 3-(4-chlorophenyl)-2-(2-oxo-2-[4-trifluoromethylphenyl]ethylthio)pyrido[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-{2-oxo-2-(4-pyrrolidin-1-ylphenyl)ethylthio}pyrido[3,2-d]pyrimidin-4(3H)-one;
- 30 3-(4-chlorophenyl)-2-[2-oxo-2-pyridin-2-ylethylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-[4-fluorobenzylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;
- 2-[3-chlorobenzylthio]-3-(4-chlorophenyl)pyrido[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-[pyridin-2-ylmethylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;

- 3-(4-chlorophenyl)-2-{5-phenyl-1,2,4-oxadiazol-3-ylmethylthio}pyrido[3,2-d]pyrimidin-4(3H)-one;  
 2-{3-(4-chlorophenyl)-4-oxo-3,4-dihydropyrido[3,2-d]pyrimidin-2-ylthio}-N-(5-methylisoxazol-3-yl)acetamide;
- 5 3-(4-chlorophenyl)-2-[3-fluorobenzylthio]thieno[2,3-d]pyrimidin-4(3H)-one;  
 3-(4-chlorophenyl)-2-[3-fluorobenzylthio]thieno[3,2-d]pyrimidin-4(3H)-one;  
 3-(4-chlorophenyl)-2-{2-(4-chlorophenyl)-2-oxoethylthio}thieno [3,2-d]pyrimidin-4(3H)-one;
- 6-(4-chlorophenyl)-5-[3-fluorobenzylthio][1,3]thiazolo[5,4-d]pyrimidin-7(6H)-one;
- 10 6-(4-chlorophenyl)-5-{2-(4-chlorophenyl)-2-oxoethylthio}[1,3]thiazolo[5,4-d]pyrimidin-7(6H)-one;  
 6-(4-chlorophenyl)-5-{2-(4-chlorophenyl)-2-oxoethylthio}[1,3]thiazolo[4,5-d]pyrimidin-7(6H)-one;
- 2-{5-chloro-1-benzothien-3-ylmethylthio}-1-(4-chlorophenyl)-9-methyl-1,9-dihydro-6H-purin-6-one;
- 15 1-(4-chlorophenyl)-9-methyl-2-(2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;  
 1-(4-chlorophenyl)-2-{2-(4-chlorophenyl)ethylthio}-9-methyl-1,9-dihydro-6H-purin-6-one;
- 20 1-(4-chlorophenyl)-2-{2-(4-chlorophenyl)-2-oxoethylthio}-9-methyl-1,9-dihydro-6H-purin-6-one;  
 1-(4-chlorophenyl)-2-[3-fluorobenzylthio]-9-methyl-1,9-dihydro-6H-purin-6-one;  
 1-(4-chlorophenyl)-2-[3-fluorobenzylthio]-1,9-dihydro-6H-purin-6-one;
- 25 2-{2-(4-chlorophenyl)-2-oxoethylthio}-3-[4-trifluoromethylphenyl]pyrido[3,2-d]pyrimidin-4(3H)-one;  
 2-[3-fluorobenzylthio]-3-[4-trifluoromethylphenyl]pyrido[3,2-d]pyrimidin-4(3H)-one;
- 2-(methylthio)-3-pyridin-3-ylpyrido[3,2-d]pyrimidin-4(3H)-one;  
 3-(4-chlorophenyl)-2-(3-oxo-4-phenylpiperazin-1-yl)pyrido[3,2-d]pyrimidin-4(3H)-one;
- 30 3-(4-chlorophenyl)-2-{2-(4-chlorophenyl)ethylamino}pyrido[3,2-d]pyrimidin-4(3H)-one;  
 3-(4-chlorophenyl)-2-[3-fluorobenzylamino]thieno[3,2-d]pyrimidin-4(3H)-one;

- 1-(4-chlorophenyl)-2-[2-cyclohexylethylthio]-9-methyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-[2-cyclohexylethylthio]-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 5 1-(4-chlorophenyl)-9-ethyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-propylthio-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-[cyclopropylmethylthio]-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 10 one;
- 1-(4-chlorophenyl)-9-cyclopropyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-[2,2,2-trifluoroethylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-[4,4,4-trifluorobutylthio]-1,9-dihydro-6H-purin-6-one;
- 15 1-(4-chlorophenyl)-9-phenyl-2-(2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-methylthio-9-phenyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-phenyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 20 one;
- 1-(4-chlorophenyl)-9-phenyl-2-[4,4,4-trifluorobutylthio]-1,9-dihydro-6H-purin-6-one;
- one;
- 4-{9-methyl-6-oxo-2-[3,3,3-trifluoropropylthio]-6,9-dihydro-1H-purin-1-yl}benzonitrile;
- 9-methyl-1-(4-methylphenyl)-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 25 one;
- 1-(4-chlorophenyl)-9-ethyl-2-(2-[4-trifluoromethylphenyl]ethylamino)-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-(2-[2-fluoro-4-trifluoromethylphenyl]ethylamino)-1,9-dihydro-6H-purin-6-one;
- 30 3-(4-chlorophenyl)-2-methylaminothieno[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-{2-(2-chlorophenyl)-2-oxoethylthio}pyrido[3,2-d]pyrimidin-4(3H)-one;
- 2-{2-(4-(3-chlorophenyl)-2-oxoethylthio)-3-phenylpyrido[3,2-d]pyrimidin-4(3H)-one};
- one;

- 3-(4-chlorophenyl)-2-[2-phenylethylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;  
3-(4-chlorophenyl)-2-[2-fluorobenzylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;  
6-(4-chlorophenyl)-5-{2-(4-chlorophenyl)ethylthio}[1,3]thiazolo[5,4-d]pyrimidin-7(6H)-one;
- 5 3-(4-chlorophenyl)-2-{2-(3-chlorophenyl)ethylthio}pyrido[3,2-d]pyrimidin-4(3H)-one;  
3-(4-chlorophenyl)-2-(2-[4-trifluoromethylphenyl]ethylthio)pyrido[3,2-d]pyrimidin-4(3H)-one;  
6-(4-chlorophenyl)-5-[3-fluorobenzylthio][1,3]thiazolo[4,5-d]pyrimidin-7(6H)-one;
- 10 6-(4-chlorophenyl)-5-{2-(4-chlorophenyl)ethylthio}[1,3]thiazolo[4,5-d]pyrimidin-7(6H)-one;  
2-{6-chloro-1-benzothien-3-ylmethylthio}-1-(4-chlorophenyl)-9-methyl-1,9-dihydro-6H-purin-6-one;  
2-{5-chloro-1-benzothien-3-ylmethylthio}-1-(4-chlorophenyl)-9-ethyl-1,9-dihydro-
- 15 6H-purin-6-one;  
2-{5-chloro-1-benzothien-3-ylmethylthio}-1-(4-chlorophenyl)-9-isopropyl-1,9-dihydro-6H-purin-6-one;  
3-(6-chloropyridin-3-yl)-2-[3-fluorobenzylthio]thieno[3,2-d]pyrimidin-4(3H)-one;  
2-{5-chloro-1-benzothien-3-ylmethylthio}-3-[4-trifluoromethylphenyl]pyrido[3,2-
- 20 d]pyrimidin-4(3H)-one;  
1-(3-chlorophenyl)-9-methyl-2-(2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-2-[3,4-dichlorobenzylthio]-9-methyl-1,9-dihydro-6H-purin-6-one;
- 25 1-(4-chlorophenyl)-9-cyclopropyl-2-(2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-9-ethyl-2-(2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;  
3-[4-trifluoromethylphenyl]-2-(2-[4-trifluoromethylphenyl]ethylthio)thieno[3,2-
- 30 d]pyrimidin-4(3H)-one;  
3-[4-trifluoromethylphenyl]-2-(2-[4-trifluoromethylphenyl]ethylthio)pyrido[3,2-d]pyrimidin-4(3H)-one;  
1-(4-chlorophenyl)-2-{2-(2,4-dichlorophenyl)ethylthio}-9-methyl-1,9-dihydro-6H-purin-6-one;



- 3-(4-chlorophenyl)-2-[3,4-dichlorobenzylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;  
2-[3-chloro-4-fluorobenzylthio]-3-(4-chlorophenyl)pyrido[3,2-d]pyrimidin-4(3H)-one;  
1-(4-chlorophenyl)-2-(2-[3-fluoro-4-trifluoromethylphenyl]ethylthio)-9-methyl-1,9-dihydro-6H-purin-6-one;  
5 3-(4-fluorophenyl)-2-(2-[4-trifluoromethylphenyl]ethylthio)pyrido[3,2-d]pyrimidin-4(3H)-one;  
1-(4-fluorophenyl)-9-methyl-2-(2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;  
10 1-(4-chlorophenyl)-9-methyl-2-(2-[4-trifluoromethoxyphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-2-{2-(4-fluorophenyl)ethylthio}-9-methyl-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-2-[2,4-dichlorobenzylthio]-9-methyl-1,9-dihydro-6H-purin-6-one;  
15 2-{5-chloro-1-benzothien-3-ylmethylthio}-9-methyl-1-[4-trifluoromethylphenyl]-1,9-dihydro-6H-purin-6-one;  
9-methyl-1-[4-trifluoromethylphenyl]-2-(2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;  
20 4-[2-{5-chloro-1-benzothien-3-ylmethylthio}-4-oxopyrido[3,2-d]pyrimidin-3(4H)-yl]benzonitrile;  
ethyl {1-(4-chlorophenyl)-9-methyl-6-oxo-6,9-dihydro-1H-purin-2-ylthio}acetate;  
4-[4-oxo-2-(2-[4-trifluoromethylphenyl]ethylthio)pyrido[3,2-d]pyrimidin-3(4H)-yl]benzonitrile;  
25 1-(4-chlorophenyl)-2-[3,4-dichlorobenzylthio]-9-ethyl-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-9-propyl-2-(2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-9-methyl-2-(2-[4-trifluoromethylphenyl]ethylamino)-1,9-dihydro-6H-purin-6-one;  
30 1-(4-chlorophenyl)-2-[3,4-dichlorobenzylthio]-9-propyl-1,9-dihydro-6H-purin-6-one;  
2-[5-chloro-1-benzothien-3-ylmethylthio]-9-methyl-1-[4-trifluoromethoxyphenyl]-1,9-dihydro-6H-purin-6-one;

- 2-{5-chloro-1-benzothien-3-ylmethylthio}-1-(4-chlorophenyl)-9-(cyclopropylmethyl)-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-{2-(4-chlorophenyl)-2-oxoethylthio}-9-(cyclopropylmethyl)-1,9-dihydro-6H-purin-6-one;
- 5 1-(4-chlorophenyl)-9-cyclopropyl-2-[3-fluorobenzylthio]-1,9-dihydro-6H-purin-6-one;
- 2-[3-chloro-4-fluorobenzylthio]-1-(4-chlorophenyl)-9-cyclopropyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-cyclopropyl-2-[3,4-dichlorobenzylthio]-1,9-dihydro-6H-purin-6-one;
- 10 1-(4-chlorophenyl)-9-cyclopropyl-2-{3-trifluoromethylbenzylthio}-1,9-dihydro-6H-purin-6-one;
- 2-[3-chlorobenzylthio]-1-(4-chlorophenyl)-9-cyclopropyl-1,9-dihydro-6H-purin-6-one;
- 15 2-{5-chloro-1-benzothien-3-ylmethylthio}-1-(4-chlorophenyl)-9-cyclopropyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-{2-(4-chlorophenyl)-2-oxoethylthio}-9-cyclopropyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-cyclopropyl-2-(2-oxo-2-[4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;
- 20 1-(4-chlorophenyl)-9-cyclopropyl-2-{2-(4-fluorophenyl)-2-oxoethylthio}-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-cyclopropyl-2-[2,4-dichlorobenzylthio]-1,9-dihydro-6H-purin-6-one;
- 25 1-(4-chlorophenyl)-9-cyclopropyl-2-{2-(2,4-dichlorophenyl)ethylthio}-1,9-dihydro-6H-purin-6-one;
- 3-(4-chlorophenyl)-2-[3-fluorobenzylthio]-7-methylthieno[3,2-d]pyrimidin-4(3H)-one;
- 2-{5-chloro-1-benzothien-3-ylmethylthio}-3-(4-chlorophenyl)-7-methylthieno[3,2-d]pyrimidin-4(3H)-one;
- 30 d]pyrimidin-4(3H)-one;
- 4-[2-[3-fluorobenzylthio]-4-oxopyrido[3,2-d]pyrimidin-3(4H)-yl]benzonitrile;
- 1-(4-chlorophenyl)-9-cyclopropyl-2-(2-[2-hydroxy-4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;

- 2-{5-chloro-1-benzothien-3-ylmethylthio}-9-ethyl-1-(4-methylphenyl)-1,9-dihydro-6H-purin-6-one;
- 2-{5-chloro-1-benzothien-3-ylmethylthio}-1-(4-chlorophenyl)-9-propyl-1,9-dihydro-6H-purin-6-one;
- 5 1-(4-chlorophenyl)-9-cyclopropyl-2-(2-[2-fluoro-4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;
- 1-(4-bromophenyl)-2-{5-chloro-1-benzothien-3-ylmethylthio}-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 2-[1,3-benzothiazol-2-ylmethylthio]-1-(4-chlorophenyl)-9-cyclopropyl-1,9-dihydro-6H-purin-6-one;
- 10 1-(4-chlorophenyl)-9-cyclopropyl-2-{2-fluoro-4-trifluoromethylbenzylthio}-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-cyclopropyl-2-{2-fluoro-5-trifluoromethylbenzylthio}-1,9-dihydro-6H-purin-6-one;
- 15 1-(4-chlorophenyl)-9-cyclopropyl-2-{3-fluoro-4-trifluoromethylbenzylthio}-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-cyclopropyl-2-(5-trifluoromethyl-1,3-benzothiazol-2-ylmethylthio)-1,9-dihydro-6H-purin-6-one;
- 2-{5-chloro-1-benzothien-3-ylmethylthio}-1-[4-dimethylaminophenyl]-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 20 3-(4-chlorophenyl)-2-[3,4-dichlorobenzylthio]-7-methylthieno[3,2-d]pyrimidin-4(3H)-one;
- 2-{2-(2,4-dichlorophenyl)ethylthio}-1-(4-fluorophenyl)-9-methyl-1,9-dihydro-6H-purin-6-one;
- 25 1-(4-chlorophenyl)-2-{2-(2,4-dichlorophenyl)ethylthio}-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-pentylthio-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-[3-methylbutylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-[2-cyclohexylethylamino]-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 30 1-(4-chlorophenyl)-2-(2-[2-chloro-4-trifluoromethylphenyl]ethylthio)-9-methyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-(2-[2-chloro-4-trifluoromethylphenyl]ethylthio)-9-ethyl-1,9-dihydro-6H-purin-6-one;

- 2-{2-(2,4-dichlorophenyl)ethylthio}-9-ethyl-1-(4-fluorophenyl)-1,9-dihydro-6H-purin-6-one;
- 9-ethyl-1-(4-fluorophenyl)-2-(2-[2-fluoro-4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;
- 5 2-(2-[2-chloro-4-trifluoromethylphenyl]ethylthio)-9-ethyl-1-(4-fluorophenyl)-1,9-dihydro-6H-purin-6-one;
- 2-{5-chloro-1-benzothien-3-ylmethylamino}-1-(4-chlorophenyl)-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-[3-fluorobenzylamino]-1,9-dihydro-6H-purin-6-one;
- 10 2-{5-chloro-1,3-benzothiazol-2-ylmethylthio}-1-(4-chlorophenyl)-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 1-(2,4-dichlorophenyl)-2-{2-(2,4-dichlorophenyl)ethylthio}-9-methyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-(2-[2-fluoro-4-trifluoromethylphenyl]ethylthio)-9-methyl-1,9-dihydro-6H-purin-6-one;
- 15 1-(4-chlorophenyl)-9-ethyl-2-(2-[2-fluoro-4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-{2-(2,4-dichlorophenyl)-2-oxoethylthio}-9-methyl-1,9-dihydro-6H-purin-6-one;
- 20 9-ethyl-1-(4-fluorophenyl)-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-[3,3,3-trifluoropropylamino]-1,9-dihydro-6H-purin-6-one;
- 9-cyclopropyl-2-{2-(2,4-dichlorophenyl)ethylthio}-1-(4-fluorophenyl)-1,9-dihydro-6H-purin-6-one;
- 25 1-(4-chlorophenyl)-2-{2-(2,4-dichlorophenyl)ethylthio}-9-(2-hydroxyethyl)-1,9-dihydro-6H-purin-6-one;
- 9-cyclopropyl-1-(4-fluorophenyl)-2-(3,3,3-trifluoropropylthio)-1,9-dihydro-6H-purin-6-one;
- 30 1-(4-chlorophenyl)-2-{2-(2,4-dichlorophenyl)ethylamino}-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-[cyclobutylmethylthio]-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 9-cyclopropyl-1-(4-fluorophenyl)-2-(2-[2-fluoro-4-trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;

- 1-(4-chlorophenyl)-9-ethyl-2-[3,3,3-trifluoro-2-hydroxypropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-[3,3,3-trifluoro-2,2-dihydroxypropylthio]-1,9-dihydro-6H-purin-6-one;
- 5 1-(4-chlorophenyl)-2-[2-cyclopentylethylthio]-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-{2-methyl-1,3-thiazol-4-ylmethylthio}-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-methyl-2-[4,4,4-trifluorobutylthio]-1,9-dihydro-6H-purin-6-one;
- 10 1-(4-chlorophenyl)-2-(2-[2-fluoro-4-trifluoromethylphenyl]ethylamino)-9-methyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-[cyclopentylmethylthio]-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-methyl-2-[4,4,4-trifluorobutylamino]-1,9-dihydro-6H-purin-6-one;
- 15 3-(4-chlorophenyl)-2-[3,3,3-trifluoropropylthio]pyrido[3,2-d]pyrimidin-4(3H)-one;
- 4-{9-methyl-6-oxo-2-[4,4,4-trifluorobutylthio]-6,9-dihydro-1H-purin-1-yl}benzonitrile;
- 4-{9-ethyl-6-oxo-2-[3,3,3-trifluoropropylthio]-6,9-dihydro-1H-purin-1-yl}benzonitrile;
- 20 1-(3-chloro-4-fluorophenyl)-9-methyl-2-[4,4,4-trifluorobutylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(3-chloro-4-fluorophenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-methyl-2-{2-methyl-1,3-thiazol-4-ylmethylthio}-1,9-dihydro-
- 25 6H-purin-6-one;
- 1-(4-chlorophenyl)-9-propyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-propyl-2-[4,4,4-trifluorobutylthio]-1,9-dihydro-6H-purin-6-one;
- 30 1-(4-chlorophenyl)-9-isopropyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-isopropyl-2-[4,4,4-trifluorobutylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-[3-fluoropropylthio]-9-methyl-1,9-dihydro-6H-purin-6-one;

- 1-(4-chlorophenyl)-9-ethyl-2-[3-fluoropropylthio]-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-9-methyl-2-(4-trifluoromethyl-1,3-thiazol-2-ylmethylthio)-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-9-methyl-2-(6-trifluoromethylpyridin-3-ylmethylthio)-1,9-dihydro-6H-purin-6-one;  
5 1-(4-chlorophenyl)-9-ethyl-2-(6-trifluoromethylpyridin-3-ylmethylthio)-1,9-dihydro-6H-purin-6-one;  
1-(4-chlorophenyl)-9-ethyl-2-(4-trifluoromethyl-1,3-thiazol-2-ylmethylthio)-1,9-dihydro-6H-purin-6-one;  
10 4-[9-ethyl-6-oxo-2-(4-trifluoromethyl-1,3-thiazol-2-ylmethylthio)-6,9-dihydro-1H-purin-1-yl]benzonitrile;  
1-(3,4-difluorophenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;  
1-(3,4-difluorophenyl)-9-methyl-2-[4,4,4-trifluorobutylthio]-1,9-dihydro-6H-purin-6-one;  
15 1-(4-chlorophenyl)-9-methyl-2-(2-trifluoromethyl-1,3-thiazol-4-ylmethylthio)-1,9-dihydro-6H-purin-6-one;  
1-(3-fluoro-4-methylphenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;  
20 1-(4-chlorophenyl)-9-methyl-2-(4-methylpiperazin-1-yl)-1,9-dihydro-6H-purin-6-one;  
1-(4-chloro-2-fluorophenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;  
1-(4-fluorophenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;  
25 1-(4-chloro-3-fluorophenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;  
1-(4-chloro-3-methoxyphenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;  
30 2-{1-(4-chlorophenyl)-9-ethyl-6-oxo-6,9-dihydro-1H-purin-2-ylthio}-N-methylacetamide;  
2-{1-(4-chlorophenyl)-9-ethyl-6-oxo-6,9-dihydro-1H-purin-2-ylthio}-N,N-diethylacetamide;

- 1-(4-chlorophenyl)-9-ethyl-2-{5-methylisoxazol-3-ylmethylthio}-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-methyl-2-methylthio-1,9-dihydro-6H-purin-6-one;
- 1-(4-fluorophenyl)-9-methyl-2-(4-trifluoromethyl-1,3-thiazol-2-yl)methylthio)-1,9-
- 5 dihydro-6H-purin-6-one;
- 9-ethyl-1-(4-fluorophenyl)-2-(4-trifluoromethyl-1,3-thiazol-2-ylmethylthio)-1,9-dihydro-6H-purin-6-one;
- 1-(3-bromo-4-chlorophenyl)-9-methyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 10 1-(4-chlorophenyl)-2-cyclohexylamino-9-ethyl-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-{2-methyl-1,3-thiazol-4-ylmethylamino}-1,9-dihydro-6H-purin-6-one;
- 3-(4-chlorophenyl)-2-(2-trifluoromethyl-1,3-thiazol-4-ylmethylthio)pyrido[3,2-
- 15 d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-(2-trifluoromethyl-1,3-thiazol-4-ylmethylamino)pyrido[3,2-d]pyrimidin-4(3H)-one;
- 1-(4-chloro-3-ethoxyphenyl)-9-ethyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 20 1-(4-chloro-3-isopropoxyphenyl)-9-ethyl-2-[3,3,3-trifluoropropylthio]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-{4-[3-trifluoromethylpyridin-2-yl]piperazin-1-yl}-1,9-dihydro-6H-purin-6-one;
- 3-(4-fluorophenyl)-2-(2-trifluoromethyl-1,3-thiazol-4-ylmethylthio)pyrido[3,2-
- 25 d]pyrimidin-4(3H)-one;
- 6-(4-chlorophenyl)-5-(2-trifluoromethyl-1,3-thiazol-4-ylmethylthio)[1,3]thiazolo[5,4-d]pyrimidin-7(6H)-one;
- 3-(4-chlorophenyl)-2-cyclohexylaminopyrido[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-2-[3,3,3-trifluoropropylthio]thieno[3,2-d]pyrimidin-4(3H)-one;
- 30 1-(4-chlorophenyl)-9-ethyl-2-(2-trifluoromethyl-1,3-thiazol-4-ylmethylamino)-1,9-dihydro-6H-purin-6-one;
- 9-ethyl-1-(4-fluorophenyl)-2-(2-trifluoromethyl-1,3-thiazol-4-ylmethylthio)-1,9-dihydro-6H-purin-6-one;

- 3-(4-chlorophenyl)-7-methyl-2-[3,3,3-trifluoropropylthio]thieno[3,2-d]pyrimidin-4(3H)-one;
- 3-(4-chlorophenyl)-7-methyl-2-(2-[4-trifluoromethylphenyl]ethylamino)thieno[3,2-d]pyrimidin-4(3H)-one;
- 5 3-(4-chlorophenyl)-7-methyl-2-[3,3,3-trifluoropropylamino]thieno[3,2-d]pyrimidin-4(3H)-one;
- 1-(4-chlorophenyl)-2-{2-(2,4-dichlorophenyl)ethylthio}-9-[2-dimethylaminoethyl]-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-cyclopropyl-2-(2-[2-methoxy-4-
- 10 trifluoromethylphenyl]ethylthio)-1,9-dihydro-6H-purin-6-one;
- 1-(4-chlorophenyl)-9-ethyl-2-[methyl(3,3,3-trifluoropropyl)amino]-1,9-dihydro-6H-purin-6-one;
- 2-[[5-chloro-1-benzothien-3-ylmethyl](methyl)amino]-1-(4-chlorophenyl)-9-ethyl-1,9-dihydro-6H-purin-6-one; and
- 15 2-chloro-5-{9-methyl-6-oxo-2-[3,3,3-trifluoropropylthio]-6,9-dihydro-1H-purin-1-yl}benzonitrile;
- or a pharmaceutically acceptable salt or tautomer thereof.

5. A pharmaceutical composition comprising one or more compounds of any one of claims 1-4, or a pharmaceutically acceptable salt or tautomer thereof in association with a pharmaceutically acceptable carrier or excipient.

6. A compound of any one of claims 1-4, or a pharmaceutically acceptable salt or tautomer thereof, for use in treatment of the human or animal body.

25

7. The use of a compound of any one of claims 1-4, or a pharmaceutically acceptable salt or tautomer thereof for use in the manufacture of a medicament for the treatment or prevention of physiological disorders that may be ameliorated by modulating VR1 activity.

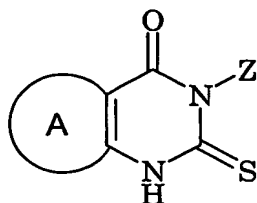
30

8. The use of a compound of any one of claims 1-4, or a pharmaceutically acceptable salt or tautomer thereof for use in the manufacture of a medicament for the treatment or prevention of a disease or condition in which pain and/or inflammation predominates.



9. A process for the preparation of a compound of claim 1, which comprises:

- (A) for compounds of formula I wherein X is S reacting a compound of formula II with a compound of formula III:



(II)

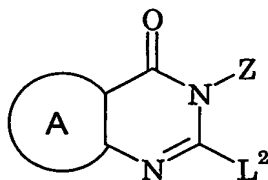


(III)

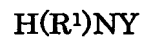
wherein A, Y and Z are as defined in claim 1 and  $L^1$  is a leaving group;

10

- (B) for compounds of formula I wherein X is  $NR^1$  reacting a compound of formula XI with a compound of formula XII:



(XI)



(XII)

15

wherein A,  $R^1$ , Y and Z are as defined in claim 1 and  $L^2$  is a leaving group; or

- (C) for compounds of formula I wherein X is O reacting a compound of formula XI with a compound of formula XVI:

20



(XVI)

wherein Y is as defined in claim 1.

10. A method for the treatment or prevention of physiological disorders that may be ameliorated by modulating VR1 activity, which method comprises administration to a patient in need thereof of an effective amount of a compound  
5 of claim 1 or a composition comprising a compound of claim 1.

11. A method for the treatment or prevention of a disease or condition in which pain and/or inflammation predominates, which method comprises administration to a patient in need thereof of an effective amount of a compound  
10 of claim 1 or a composition comprising a compound of claim 1.